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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tetsuo Asada

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EXAMINER

NGUYEN, KEVIN M

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/797,108	Applicant(s) ASADA ET AL.	
	Examiner Kevin M. Nguyen	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/11/04, 6/12/06</u> | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 5, 6 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Youn (US 7,030,843).

3. Claim 1, Youn teaches a display (500) comprising: a display panel (500) provided with scanning lines (G1-Gn), signal lines (D1-Dm) located to intersect the scanning lines, and sub-pixels (m X n) connected to the signal lines; a source driver (200), whose output terminals are each connected to an associated one of the signal lines, for driving the sub-pixels; and a controller (100) for supplying a control signal to the source driver, wherein given that n is an integer of two or more (two dot inversion), the polarity (+ and -) of an output voltage supplied from each output terminal is switched relative to a common voltage (Vcom) in every n horizontal scanning periods (1H), and the timing of switching of the polarity (switching + or -) of the output voltage is shifted by one horizontal scanning period for each frame (the timing of frame N is shifting through frame N+3, fig. 9).

4. Claim 2, Youn teaches the display of claim 1, wherein the source driver (200) has a polarity shift circuit (the inversion is shifting) to which a polarity switching signal for

controlling the switching of the polarity of the output voltage is inputted, and which outputs the polarity switching signal by shifting the signal by one horizontal scanning period (1H) for each frame, as discussed in col. 3, lines 19-44.

5. Claim 3, Youn teaches the display of claim 1, wherein the controller (100) has a source driver (200) signal generating circuit comprising: an n line inverting (n line inversion, fig. 9) circuit for generating a polarity switching signal (+ or -) for controlling the switching of the polarity of the output voltage (+ or -); and a polarity shift circuit for outputting the polarity switching signal (the inversion is shifting) by shifting the signal by one horizontal scanning (1H) period for each frame (fig. 9).

6. The limitation of claim 5 is similar to those of claim 1, though in method form, therefore the rejection of claim 5 will be treated using the same rationale as claim 1.

7. Claim 6, Youn teaches the method of claim 5, wherein the waveform of the output voltage of each output terminal is changed in $2n$ ways (4 ways) for each frame, and is restored in a cycle of $2n$ frames (4 frames, fig. 9).

8. Claim 8, Youn teaches a method for driving a display comprising: a display panel (500) having scanning lines ($G1-Gn$), signal lines ($D1-Dm$) located to intersect the scanning lines, and sub-pixels (pixels at + or -) that are connected to the signal lines and arranged in a matrix pattern ($m \times n$); and a source driver (200), whose output terminals are each connected to an associated one of the signal lines, for driving the sub-pixels, the display being driven by employing an n line dot inversion drive scheme given that n is an integer of two or more (2×1 dot inversion), wherein the method comprises the steps of: a) supplying, from each output terminal of the source driver

(200), an output voltage whose polarity is switched for every n lines (+ and – is alternating); and b) changing the waveform of the output voltage of each output terminal in $2n$ ways for each frame (4 frames), and restoring the waveform in a cycle of $2n$ frames (4 frames, fig. 9).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 4, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Youn in view of Choi (US 6,741,238).

Youn teaches all of the claimed limitation of claims 1, 5, and 8, except for recovery means. As modified by Choi reference, Choi teaches a related liquid crystal display device which includes the recovery circuit (15), the switch (15) is closed for selecting the sustain energy during display data (fig. 7).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Youn to have the recovery circuit (15) as taught by Choi, because this would and improve energy efficiency by selectively recovering energy and performing a selective driving by an effective data, while providing a power saving circuit of a display panel (col. 4, lines 29-45 of Choi).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Nguyen whose telephone number is 571-272-7697. The examiner can normally be reached on MON-THU from 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Kevin M. Nguyen
Examiner
Art Unit 2629

KMN